

ELECTRON TUBE DATA SHEET  
WESTERN ELECTRIC 437A ELECTRON TUBE



DESCRIPTION

The 437A electron tube is a high figure of merit triode with an indirectly heated cathode. It was designed primarily for the output amplifier of the L-3 tandem two stage amplifier.

CHARACTERISTICS

Heater Voltage . . . . .	6.3 volts
Cathode Current . . . . .	$E_b = 160$ volts; 36.5 milliamperes
Transconductance . . . . .	$E_{ccl} = +7.5$ volts; $R_k = 262$ ohms 46000 micromhos

File: General Purpose Section  
Issue 1, 10-55

437A

GENERAL CHARACTERISTICSELECTRICAL DATA

Heater Voltage . . . . .	6.3 volts	
Heater Current . . . . .	450 milliamperes	
Direct Interelectrode Capacitances	Without External Shield	With External Shield
	<u>Shield</u>	<u>(RETMA #39)</u>
Grid to Plate (maximum) . . . . .	3.8	3.8 uuf
Input: g to (h+k+i.s.) . . . . .	11.1	11.3 uuf
Output: p to (h+k+i.s.) . . . . .	1.0	2.1 uuf

MECHANICAL DATA

Cathode . . . . .	Coated Unipotential
Bulb . . . . .	T9
Base . . . . .	See outline drawing page 4
Mounting Position . . . . .	Any
Dimensions and pin connections shown in outline drawing on page 4	

MAXIMUM RATINGS, Design Center Values

Plate Voltage . . . . .	250 volts
Plate Dissipation . . . . .	7.0 watts
Control Grid Dissipation . . . . .	see footnote 1
Cathode Current . . . . .	45 milliamperes
Heater-Cathode Voltage . . . . .	50 volts
Bulb Temperature . . . . .	130 centigrade

MAXIMUM CIRCUIT VALUES

Grid Circuit Resistance:	
For Fixed Bias . . . . .	0.05 megohms
For Cathode Bias . . . . .	0.10 megohms

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

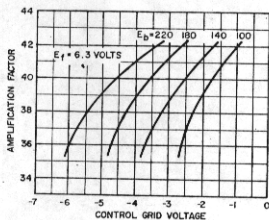
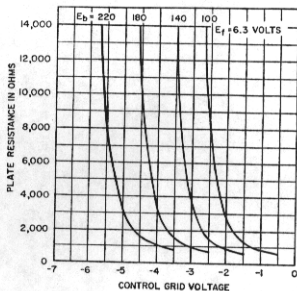
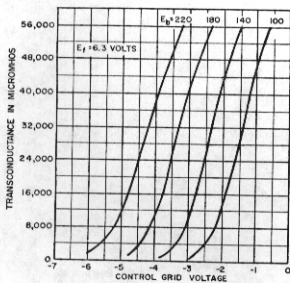
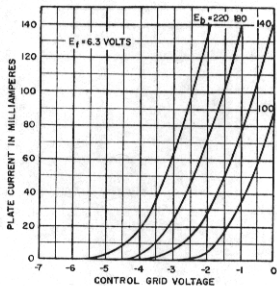
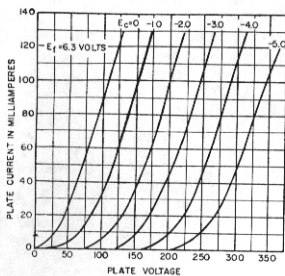
Plate Voltage . . . . .	140	180	160	volts
Control Grid Voltage . . . . .	-2.0	-3.0	---	volts
Control Grid Supply Voltage <sup>2</sup> . . . . .	---	---	+7.5	volts
Cathode Bias Resistor <sup>2</sup> . . . . .	---	---	262	ohms
Plate Current . . . . .	29.0	25.0	36.5	milliamperes
Amplification Factor . . . . .	41.0	41.0	41.0	
Plate Resistance . . . . .	950	980	900	ohms
Transconductance . . . . .	43000	42000	46000	micromhos
Control Grid Voltage (approximate) for Plate Current of 10 microamperes . . . . .	-5.0	-6.3	---	volts
Modulation				
Second Order (2F) <sup>3</sup> . . . . .	---	---	-37	db
Third Order (3F) <sup>4</sup> . . . . .	---	---	-56	db
Load Resistance . . . . .	---	---	270	ohms

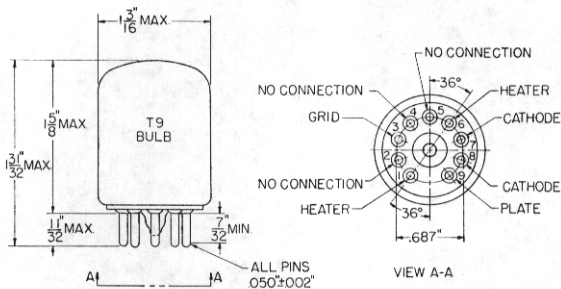
Note 1: Operation with the control grid positive with respect to cathode is not recommended.

Note 2: Reference point for Control Grid Voltage is the negative end of the cathode bias resistor.

Note 3: Ratio of product to fundamental at output for 0.1 volt rms signal from grid to cathode.

Note 4: Ratio of product to fundamental at output for a 0.2 volt rms signal from grid to cathode.





A development of Bell Telephone Laboratories, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company